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| 09/913,314 | 12/21/2001 | Gianfranco Bedetti | Q65608 | 8439 |
| 7590 | 10/19/2004 | | EXAMINER | |
| Sughrue Mion Zinn Macpeak & Seas 2100 Pennsylvania Avenue NW Washington, DC 20037-3202 | | | BHAT, NINA NMN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1764 | |

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/913,314

Applicant(s)

BEDETTI, GIANFRANCO

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-10 and 12-17 is/are rejected.
- 7) ☒ Claim(s) 1-4 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>8-10-2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-17 are objected to because of the following informalities: In each of the claims applicant has used "characterized in that" language which admittedly is found in many US patents, however, the examiner suggests replacing "characterized in that" with --wherein--. In claim 6, applicant has used "preferably" language which is a linking term. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim the nozzles are arranged in one collector recites the broad recitation in only one row, and the claim also recites parallel to the lower end of the collector, which is the narrower statement of the range/limitation. Also in claim 14 the term "preferably" is used to link the tilt angle of the nozzles to the wall. Appropriate correction is required.

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2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language used in drafting claim 1 is awkward and cumbersome. It is unclear what applicant means by "characterized in that it comprises the steps of..." What does applicant mean by "it" the process or the secondary reformer or the steps? Further, the recitation "of a plurality of jets not laid the one upon the other with respect to the direction of flow...." Also, in claim 15, applicant refers to "it" which is vague, indefinite and not clear to the ordinary artisan what applicant means by "it".

Correction is required.

3. Claims 2-4 and 16-17 are objected as being dependent upon a rejected base claim.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 5-10 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al.

Reed et al. teaches the burner substantially as claimed. Reed et al. teach an improved air injector for secondary reformer Which provides an air injector which provides a plenum from which a large plurality of jet forming pipes are attached in at least two parallel rows each set of pipes circumferentially spaced and directed in radial plants outwardly at a selected angle to the axis of the air pipes. Reed et al. teach that the densely spaced jet of pipes and corresponding jets of air which are direct outwardly at a selected angle for example 45° in the radial planes forms a network of jets of air which cross the annular space between the air pipe and the inlet to the reformer. With this arrangement turbulent mixing of the gases occurs and the hot process gases form a flame in which the combustion and reaction takes places as the hot gas moves downward under pressure through the reactor.

However, Reed et al. does not teach that the inlet nozzles for gas flow is specifically used for combusting hydrocarbons and oxygen, nor does Reed teach including more than on collector or baffle.

It would have been obvious to one having ordinary skill in the art from reading Reed et al. to provide a burner for secondary reforming which includes a cylindrical duct of a predetermined length for feeding a gas flow to a combustion chamber bean the burner, the burner includes a plurality of nozzles in an air injection head. Specifically the vessel includes a conical expanding top portion (12) and a cylindrical lower potion (14) with a tubular portion (18) leading vertically downward and attached to the conical

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portion. The vessel is made of steel plate, lined with refractory. The plurality of air jet pipes are inserted and sealed through the wall of the air plenum, arranged symmetrically circumferentially in two rows and spaced a predetermined distance apart axially from the plenum, the burner as described by Reed et al. is constructed and arranged similarly to applicant's burner. With respect to the diameters of the nozzles, this appears to be an obvious design choice which based on the amount of gas to be processed, the size of the reactor etc, and Reed et al. does specifically address that how the jet nozzles are arranged to avoid collapse of the flame as air is discharged from each tube to contact and mix with combustible gases at temperatures above their ignition points and to provide turbulent mixing. It is maintained that to employ more than one collector or baffle to direct flow to the catalytic reactor would have been obvious to one having ordinary skill in the art because it is well known from reading the reference, reactor design and basic heat, mass and momentum transfer that by directing the flow and causing more agitation will improve heat and mass transfer characteristics and thereby improve the overall performance of the secondary reformer. Thus rendering applicant's invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.

7. Claims 1-4, 11 and 17 if dependent upon claim 11 would be allowable if rewritten to overcome the objections and 112, second paragraph rejections.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hershkowitz et al. teach a multi-injector autothermal reforming process and apparatus for producing synthesis gas. Martin et al. teach an oxygen


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injector means for a secondary reformer. Gateau et al. teach a device and process for the manufacture of synthesis gas through combustion.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


N. Bhat
Primary Examiner
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